412

SERVICE MANUAL 4070

marantz

model 4070

Stereo 2+Quadradial 4

Console Amplifier

marantz

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1. INTRODUCTION

This service manual was prepared for use by Authorized Warranty Stations and contains service information for Marantz Model 4070 Solid-State Quadradial Console Amplifier.

Servicing information and voltage data included in this manual are intended for use by the knowledgeable and experienced technician only. All instruction should be read carefully. No attempt should be made to proceed without a good understanding of the operation in the circuits.

The parts lists furnish information by which replacement part may be ordered from the Marantz Company. A simple description is included for parts which can usually be obtained through local suppliers.

2. SERVICE NOTES

As can be seen from the circuit diagram the chassis of Model 4070 consists of the following units. Each unit mounted on a printed circuit board is described within the square enclosed by a bold dotted line on the circuit diagram.

1. Phono Equalizer Amplifier ..... mounted on P.W. Board, P400
2. Tone Amplifier ..... mounted on P.W. Board, PE01
3. Power Amplifier ..... mounted on P.W. Board, P700
4. Loudness, Tape Mon., High Filter, Main-Remote Speaker Switch Unit ..... mounted on P.W. Board, PS01
5. Power Supply, Vari-Matrix, Buffer Amplifier Unit ..... mounted on P.W. Board, P800
6. Tone & Balance Variable Resistor Unit ..... mounted on P.W. Board, PF01

3. SELECTOR SWITCH

Signals from the PHONO jacks are applied to the phono-amplifiers and equalized to match the RIAA curve for flat frequency response.

The outputs of the phono-amplifiers and signals from the TUNER, TAPE 2 and CD-4/AUX jacks are led to the SELECTOR switch, S001. The SELECTOR switch selects one set of signals from PHONO, TUNER, TAPE 2 and CD-4/AUX jacks and sends them to the MONITOR switch and TAPE 1 MON OUT jacks. The selected signals are then applied to the MODE switch, S002.

PHONO and TUNER jacks are for 2-channel input signals, that is stereo signals. CD-4/AUX, TAPE 2, TAPE 1 MON IN and TAPE 1 MON OUT jacks are 4-channel, that is quadraphonic, signals.

4. MODE SWITCH

MODE switch S002 has positions of MONO, 2 CH, DISCRETE, VARI-MATRIX, and SQ DECODER.

In the MONO position all input signals are mixed together and delivered to all four channels.

In the 2 CH position stereo signals are directly routed to the pair of front left (LF) and front right (RF) channels; the same signals at the LF and RF channels are fed to the rear left (LR) and rear right (RR) channels, respectively. When quadraphonic signals are applied to the input terminals, the LF and LR signals and RF and RR signals are separately added, thus the (LF + LR) signal is delivered to the LF and LR channels and the (RF + RR) signal is delivered to the RF and RR channels.

In the DISCRETE position the quadraphonic input signals are separately routed as 4-channel stereophonic signals to each channel. At this position, for ordinary stereo input signals, neither LR nor RR channels no signal to carry.

In the VARI-MATRIX position, 2-channel stereo input signals are converted into quadraphonic signals through the vari-matrix circuit; the input right and left channe' signals are fed directly to the LF and RF channels, while the signals to the LR and RR channels are synthesized from the 2-channel input signals under the control of the DIMENSION control.

The LR and RR channel signal components are controlled by the DIMENSION control as shown below.

DIMENSION control setting	LR output	RR output
Bottom	LF + RF	RF + LF
Center	LF	RF
Top	LF – RF	RF – LF

When the DIMENSION control is set at the bottom the LR and RR channel signals become monaural, at the center are stereophonic, and at the top are out of phase, thus providing vanished sound image positioning.

In the SQ DECODER position, "compatible stereo-quadraphonic (SQ) record" developed by CBS is ideally decoded into 4-channel signals. This requires incorporation of the adapter, Model SQA-1, into the set.

When the MONITOR switch is set to the TAPE position, signals from the TAPE 1 MON OUT terminals are in discrete mode regardless of the MODE switch setting. In the SOURCE position, the signals are processed into the mode indicated by the MODE switch in the MONO, 2CH, or DISCRETE position of the MODE switch, while signals remain in discrete mode in the VARI-MATRIX and SQ DECODER positions.

5. BTL (Balanced Transformerless) CONNECTION

This power amplifier is designed to operate in either 2-channel or 4-channel modes, depending on the setting of the POWER MODE switch that incorporates phase-conversion and power switch for BTL connection.

With this switch placed in the 15Wx4 position, this unit operates as a 15W 4 channel amplifier. With the switch placed in the 35Wx2 position, the unit operate as a 35W 2 channel amplifier, in which case, the power output is obtained only from FRONT SPK terminals.

6. PRE-AMPLIFIER

Mode processed signals are led through the respective VOLUME controls to the TONE CONTROL circuits. Hi and low frequency response can be varied with the BASS and TREBLE controls. These controls permit separate adjustment of front stereo pair of channels (LF, RF) and rear stereo pair of channels (LR, RR).

7. BALANCE CONTROL

Signals passed through the tone controls go into the balance control circuit, in which the signals are controlled by three balancers: the FRONT L-R, REAR L-R, and FRONT-REAR. By setting the FRONT-REAR balancer to the "front" side and the FRONT LEFT-RIGHT balancer to the "left" side, for example, only the front left (LF) is drived.

The balance control circuit is provided with the REMOTE CONTROL switch which makes the Model RC-4 Remote Control Box operative when the switch is set in the "REMOTE" position. In the "REMOTE" position the balancers on the Model 4070 become ineffective since signals are led to the Model RC-4. The volume can be varied by the control either on this set or Model RC-4. At this time, the maximum volume level available by adjustment of the Model RC-4 is not determined by the MASTER VOLUME control on the Model 4070.

8. MAIN AMPLIFIER

The output signals from the balance control circuit are led to the main amplifiers through the low-pass filter and the high-pass filter circuit.

Transistors H701 and H703 are the pre-driver coupled to the transistor H713. The transistor H713 drives the inverter transistors H711 and H713 which, in turn, drive the power stage consisting of H001 and H003. Transistors H707 and H709 are current limiter operating as a power protection circuit.

Excessive current flow in the power stage are detected by the resistors H747 and H749 and the resultant variations are applied to the transistors H707 and H709 and make them turned on. This decreases the base biasing current for H711 and H713. In this way the current flow in the power stage (H001 and H003) is restricted within a safe value.

9. POWER SUPPLY UNIT

The power supply unit consisting of transistors H811 and H812, which operates as an automatic voltage regulator, provides +35V DC to all of the amplifiers except main amplifiers.

10. TROUBLE ANALYSIS

1. Excessive line consumption	a. Check for shorted H007, C001, C002. b. Check for shorted transistor H001 through H004. Check L001 for short.
2. No line consumption or zero bias	a. Check line cord, fuse, shorted H005, H006, H718, H719. b. Check for open rectifiers H007, or open L001.
3. Excessive hum and noise	a. Check filter capacitors C001, C002, H811, H812.
4. Parasitic oscillation	a. Check for defective C711, C712, C713, C714, C721, C722, C732, C733.
5. Improper clipping	a. Check for proper adjustment R715 and R716. b. Check for shorted transistor H711 through H714.

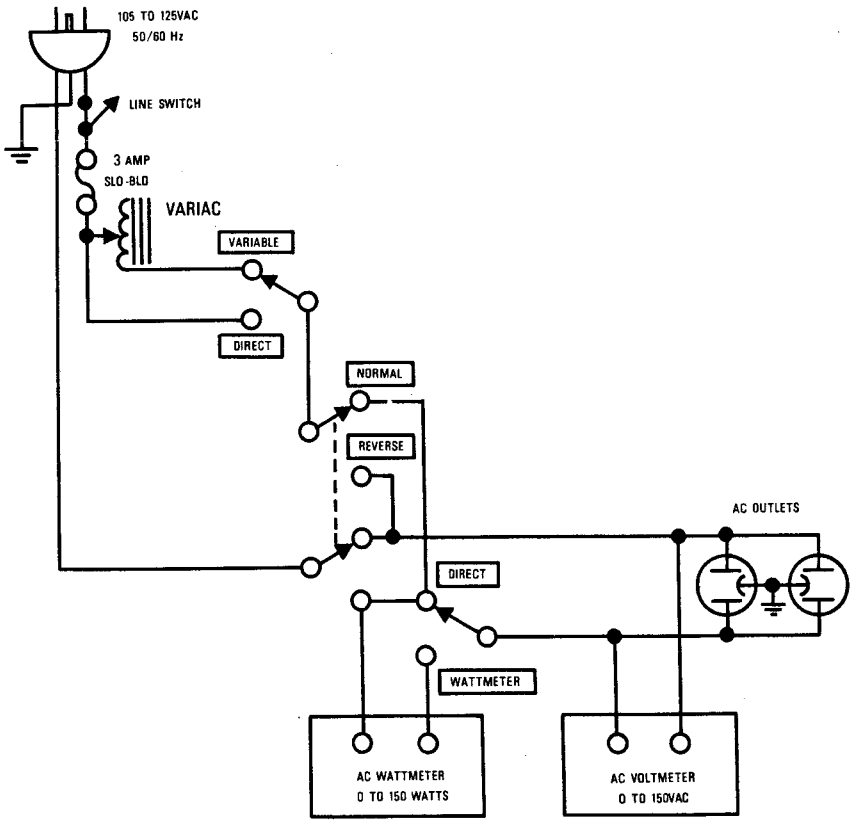


Figure 1. AC Power Control Box Simplified Schematic

11. POWER AMPLIFIER ADJUSTMENT

Connect a VTVM between J713(+) and J719(—) and adjust the trimming resistor R735 until the VTVM reads 15mV DC. And next, connect a VTVM between J715 and J706 (GROUND) and adjust the trimming resistor R715 until the VTVM reads 0mV DC. Do over again. For the other channel, connect the VTVM between J714(+) and J720(—) and adjust the R736 for the same reading, and connect the VTVM between J716 and J706 and adjust the R716 for the same reading. Do over again.

12. POWER SUPPLY ADJUSTMENT

Connect a VTVM between J819(+) and J824(—) and adjust R855 until the VTVM reads 35.0V under no signal condition.

13. TEST EQUIPMENT REQUIRED FOR SERVICING

Table 1 lists the test equipment required for servicing the Model 4070 Solid-State Quadradial Console Amplifier.

Item	Manufacturer and Model No. (or equivalent)	Use
Distortion Analyzer	Hewlett Packard, Model 331A or 333A	Measures distortion and voltage of amplifier output.
Audio Oscillator	Weston Model CVO-100P (NOTE: Less than 0.02 percent residual distortion is required.)	Sinewave and squarewave signal source.
Oscilloscope	Tektronix, Model 503; Data, Model 555	Waveform analysis and trouble shooting.
VTVM	RCA Senior Volt-Ohmyst, Model WV-98C	Voltage and resistance measurements.
AC Wattmeter	Simpson, Model 390	Monitors primary power consumption of amplifier
AC Ammeter (0 to 10 amps)	Commercial Grade	Monitors amplifier output under short circuit condition.
Line Voltmeter (0 to 150 vac)	Commercial Grade	Monitors potential of primary power to amplifier
Variable Autotransformer (0 to 140 vac, 10 amps)	Powerstat, Model 116B	Adjusts level of primary power to amplifier
Shorting Plug	Use phono plug with 600 ohms across center pin and shell.	Shorts amplifier input to eliminate noise pickup.
Power Supply Bleeder Resistor (10 ohms at 1W)	Commercial Grade	Discharges power supply filter capacitors prior to disassembly or resistance measurements.
Output Load Resistor (8Ω ± 0.5%, 100W)	Commercial Grade	Provides 8-ohm load for amplifier output termination.
Output Load Resistor (4Ω ± 0.5%, 100W)	Commercial Grade	Provides 4-ohm load for amplifier output termination.

Table 1. Test Equipment Required for Servicing

14. PERFORMANCE VERIFICATION

Test Procedure

A. Test Equipment

Refer to Table 1 for required test equipment.

B. Preliminary Procedures

1. Make the test setup shown in Figure 1 with the instrument controls set in the following positions:

Line Switch	off
Variable-line switch	variable
Watt Meter Switch	on
Variac	0 (fully CCW)
Load	8 ohms (0.5 mfd – off)
Audio Generator	frequency 1 KHz
Output	5V range
Gain	minimum
AC Volt Meter	30V range

2. Make sure that connections between the resistive load and the system terminals of the Model 4070 have negligible resistance compared with the resistance of the load itself. Appreciable resistance in wiring adds to the total load, resulting in inaccurate measurements of output power.
3. Connect amplifier output to load and connect AC cord to line power. Connect a shorting plug to the PHONO input jack of the model 4070.
4. Remove the top cover.

C. Total Hum and Noise Test

1. With shorting plugs connected to the CD-4/AUX input jacks and a 8-ohm resistive load connected across the speaker system output terminals, connect a distortion analyzer across the load.

   NOTE: In this test and tests that follow, if distortion analyzer used does not contain a built-in voltmeter, a VTVM may be substituted.

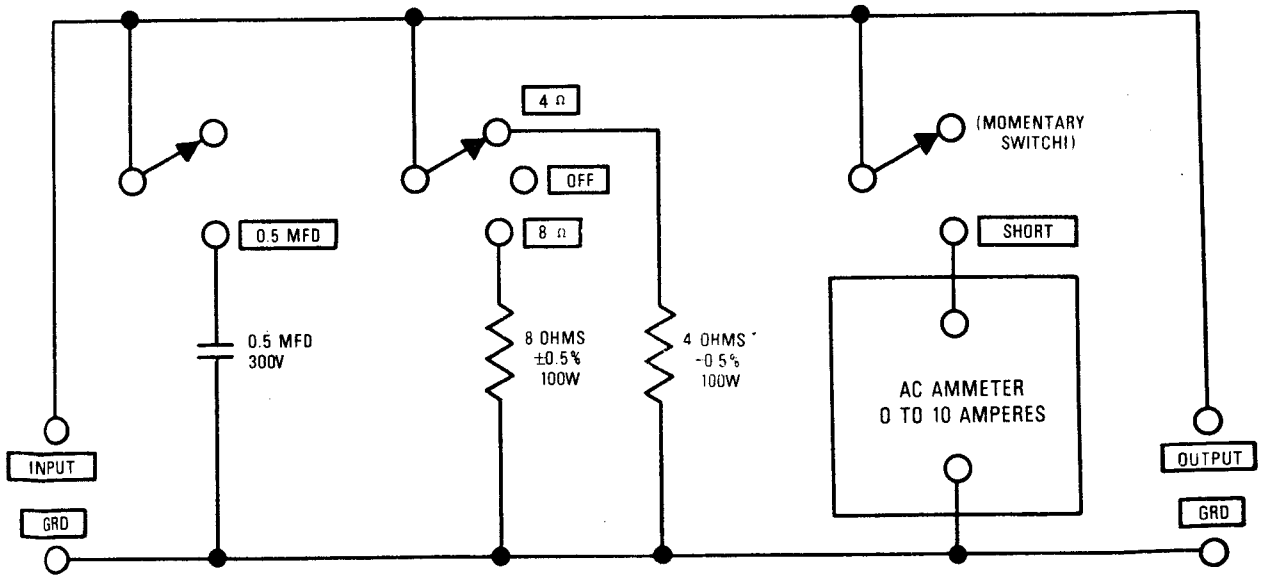


Figure 2. Amplifier Output Load Box Simplified Schematic

2. Set the distortion analyzer controls for voltage measurements and apply power to the amplifier. Set the VOLUME control fully CCW. Set the SELECTOR switch to CD-4/AUX and the MODE switch to DISCRETE.
3. If the distortion analyzer indicates more than 3mV, refer to the trouble analysis section of this manual.
4. Set the VOLUME control fully CW. If the distortion analyzer indicates more than 3mV, refer to the trouble analysis section of this manual.

D. Maximum Power Output

1. Connect the audio oscillator to the CD-4/AUX input. Set audio oscillator frequency to 1 KHz. Set SELECTOR switch to CD-4/AUX.
2. With the distortion analyzer connected across the output load (8-ohm), set the analyzer on the 30V AC scale.
3. Turn the analyzer on and increase the audio oscillator output to 190mV, and verify the analyzer indicates more than 10.9V.

E. Harmonic Distortion Test

1. Set the frequency of the audio oscillator and the distortion analyzer to 20 KHz.
2. Set the controls of the analyzer for voltage measurement on the 30-volt scale.
3. Adjust the audio oscillator output level until the analyzer meter indicates 10.9 volts.
4. Switch the distortion analyzer to Set Level – Manual mode, and adjust SENSITIVITY for full scale reading on 0-1 scale.
5. Measure the total harmonic distortion with the analyzer and verify it is less than 0.9%.
   NOTE: Any parasitic oscillation in the amplifier will be displayed on the oscilloscope, when capacitance is switched into the load.
6. Switch the distortion analyzer back to SET LEVEL MANUAL.
   (Do not adjust sensitivity of analyzer.)
7. Change the frequency of the audio oscillator and distortion analyzer to 1 KHz. Adjust audio oscillator output as necessary to have a full scale reading on the 0-1 scale on the analyzer.
8. Measure the distortion, verifying it is no greater than 0.9%.
9. Repeat steps 7 and 8, changing frequency to 40 Hz.
   Distortion should be no more than 0.9%.
10. Check for parasitic oscillations; there should be none.

F. Channel Separation

1. Set audio oscillator to 20 KHz. Connect oscillator to front left channel CD-4/AUX input only, with shorting plug (10 Kohm) in all other channels CD-4/AUX input. Connect distortion analyzer to front left channel speaker output terminals.
2. Adjust oscillator output until distortion analyzer indicates 0 dB (2.8V).
3. Measure RF, LR, RR channel output. Distortion analyzer should indicate –30 dB or less.
4. Repeat step 1 and 2 with substituted channel driving.
5. If indication is not less than –30 dB, adjust input wires to preamp board until reading is –30 dB or less.

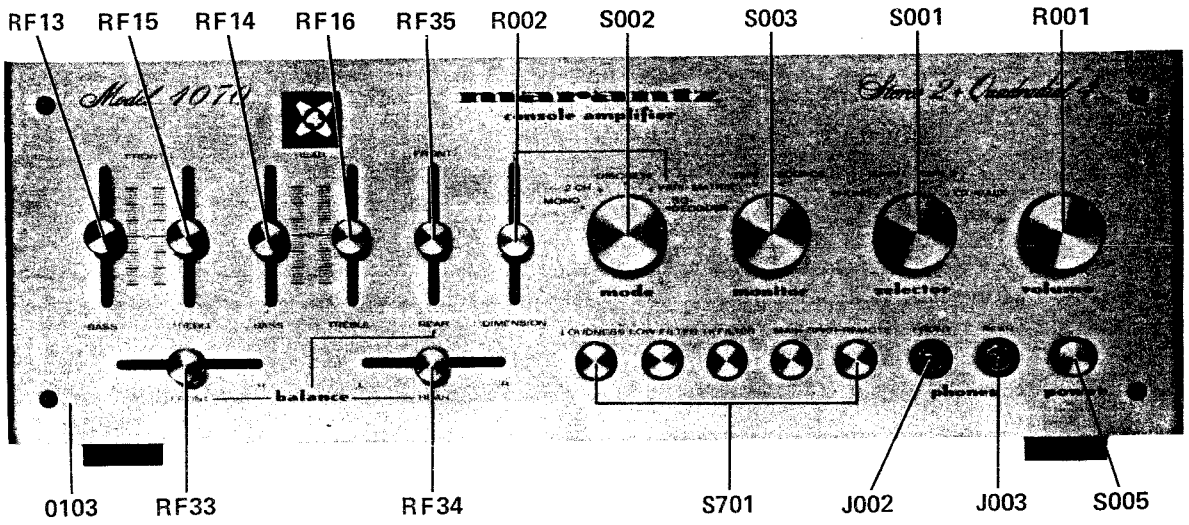


Figure 3. Front Panel Adjustment and Component Locations

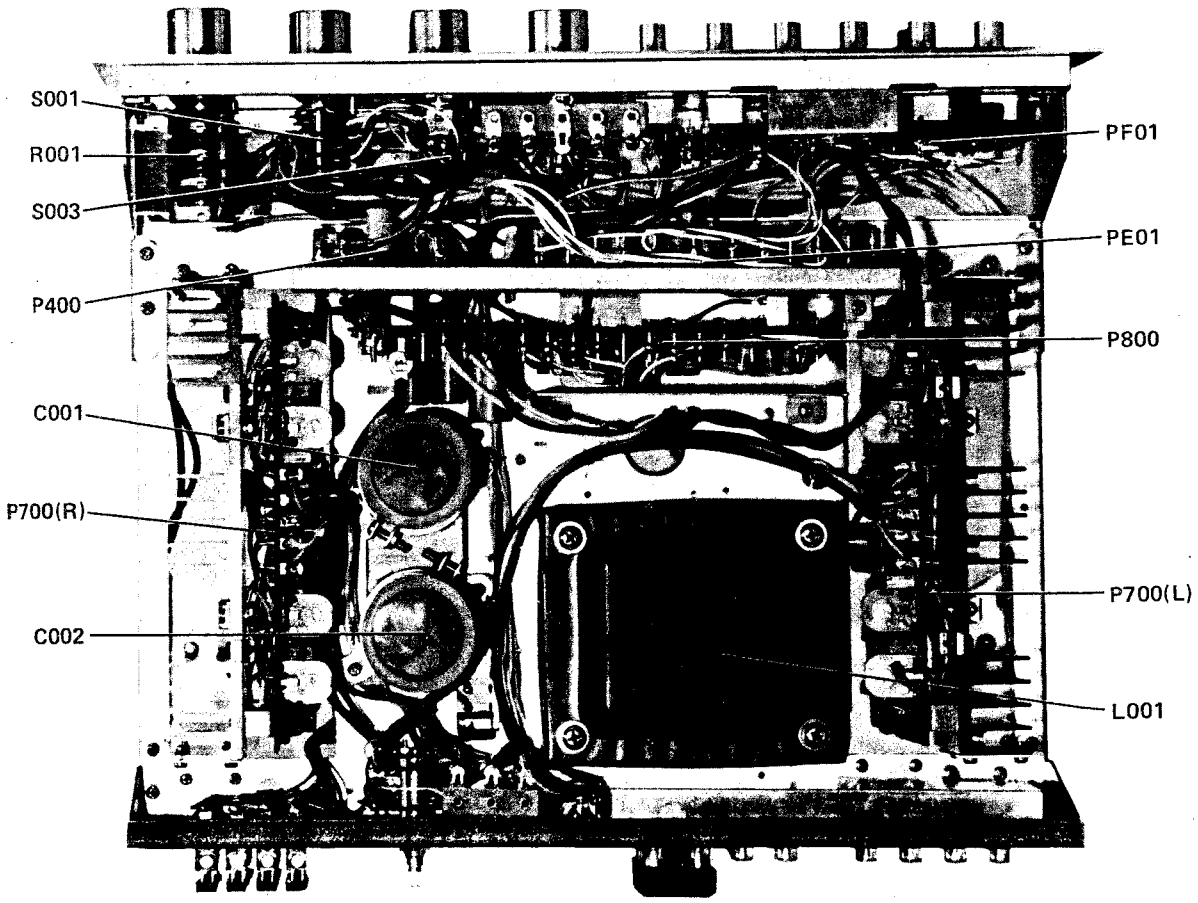


Figure 4. Main Chassis Component Locations (Top View)

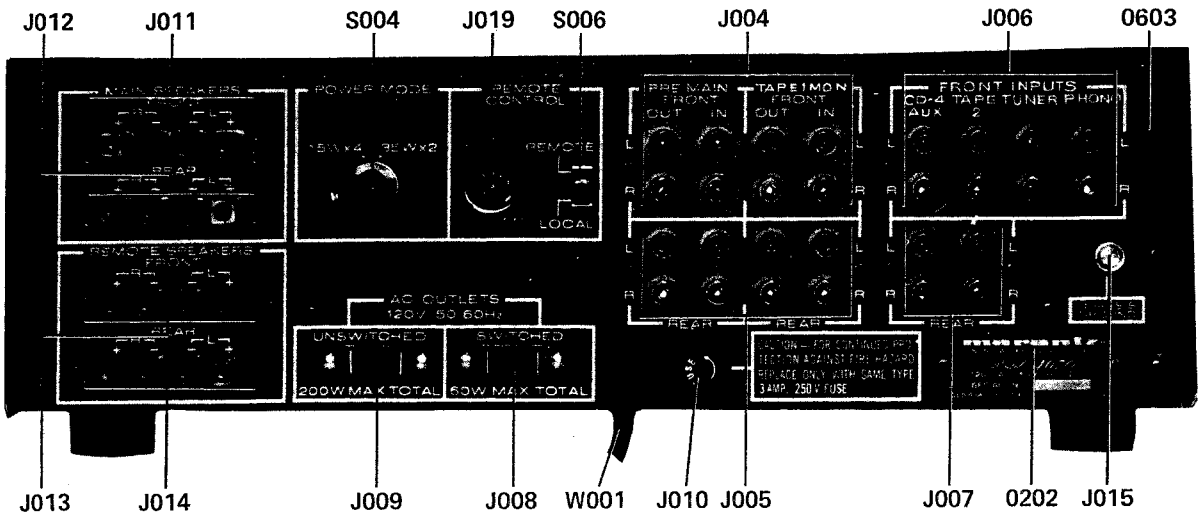


Figure 5. Rear Panel Component Locations

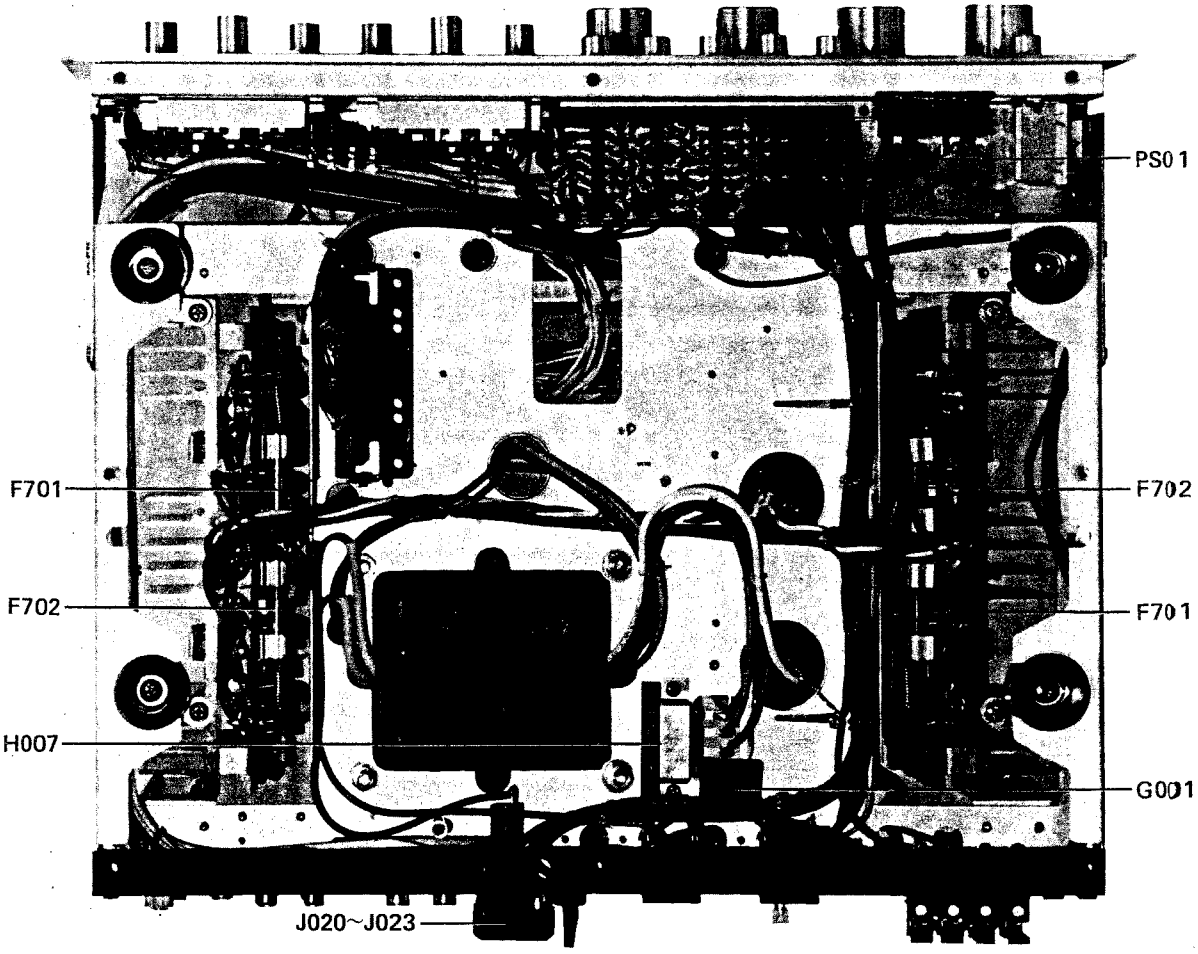


Figure 6. Main Chassis Component Locations (Bottom View)

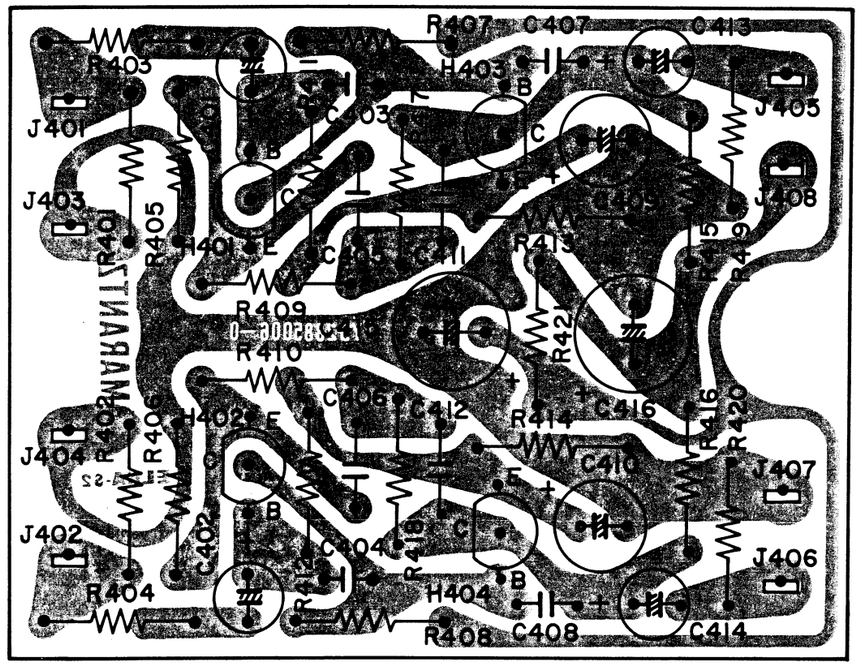


Figure 7. Phono Amplifier Assembly P400 Component Locations

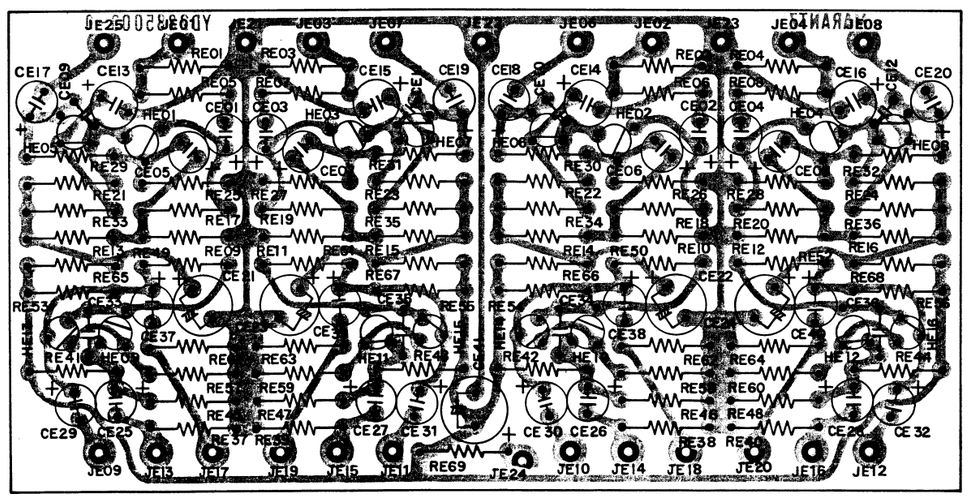
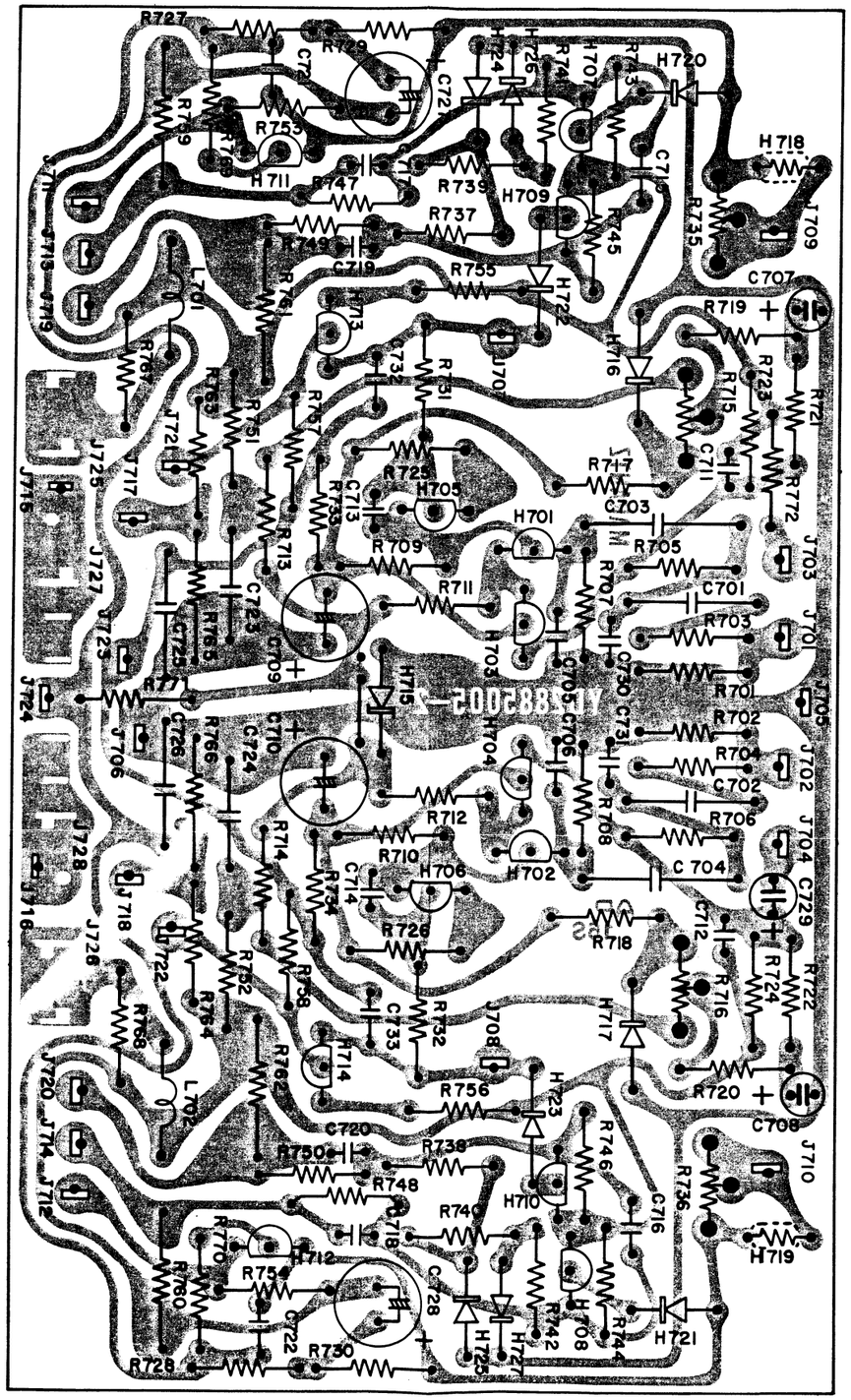


Figure 8. Tone Amplifier Assembly PE01 Component Locations



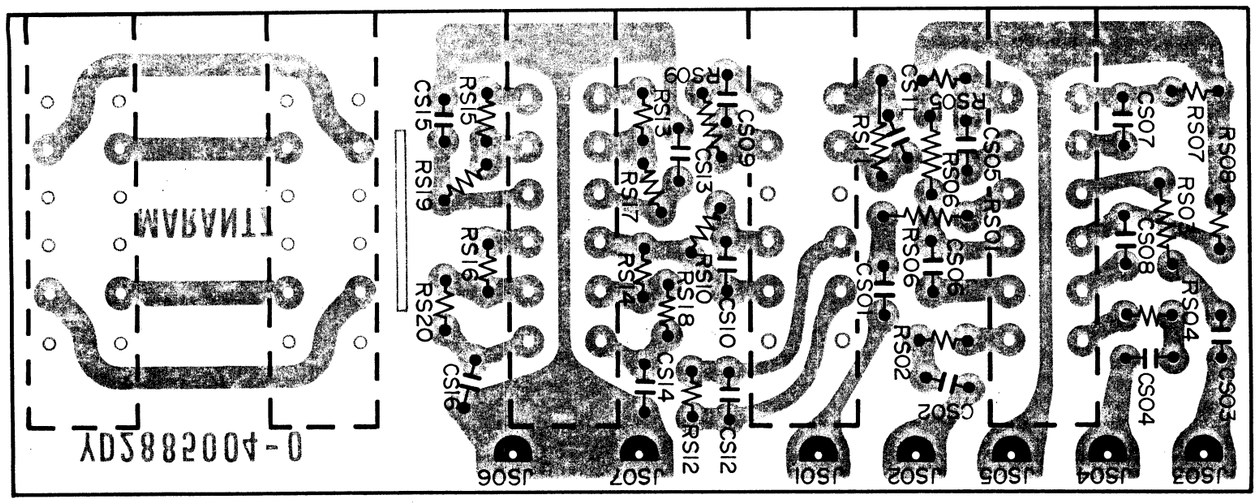


Figure 10. Main-Remote, Hi-Filter and Tape Moni. Switch Unit Assembly PS01 Component Locations

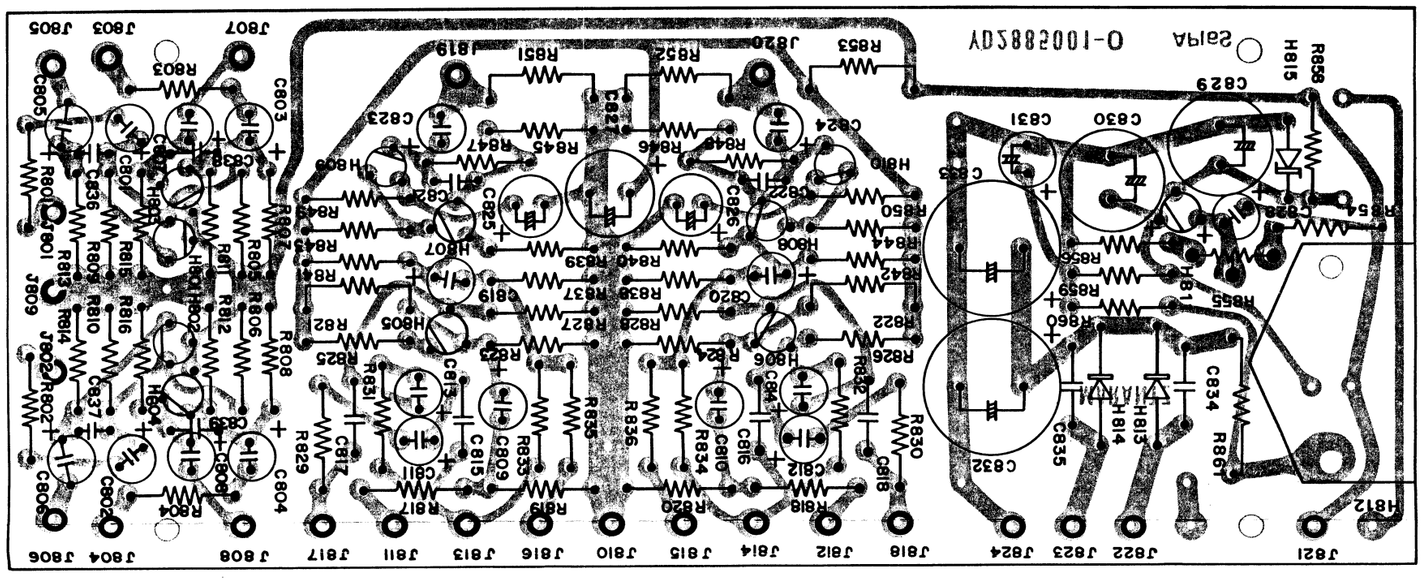


Figure 11. Power Supply, Vari-Matrix, Buffer Amplifier Unit Assembly P800 Component Locations

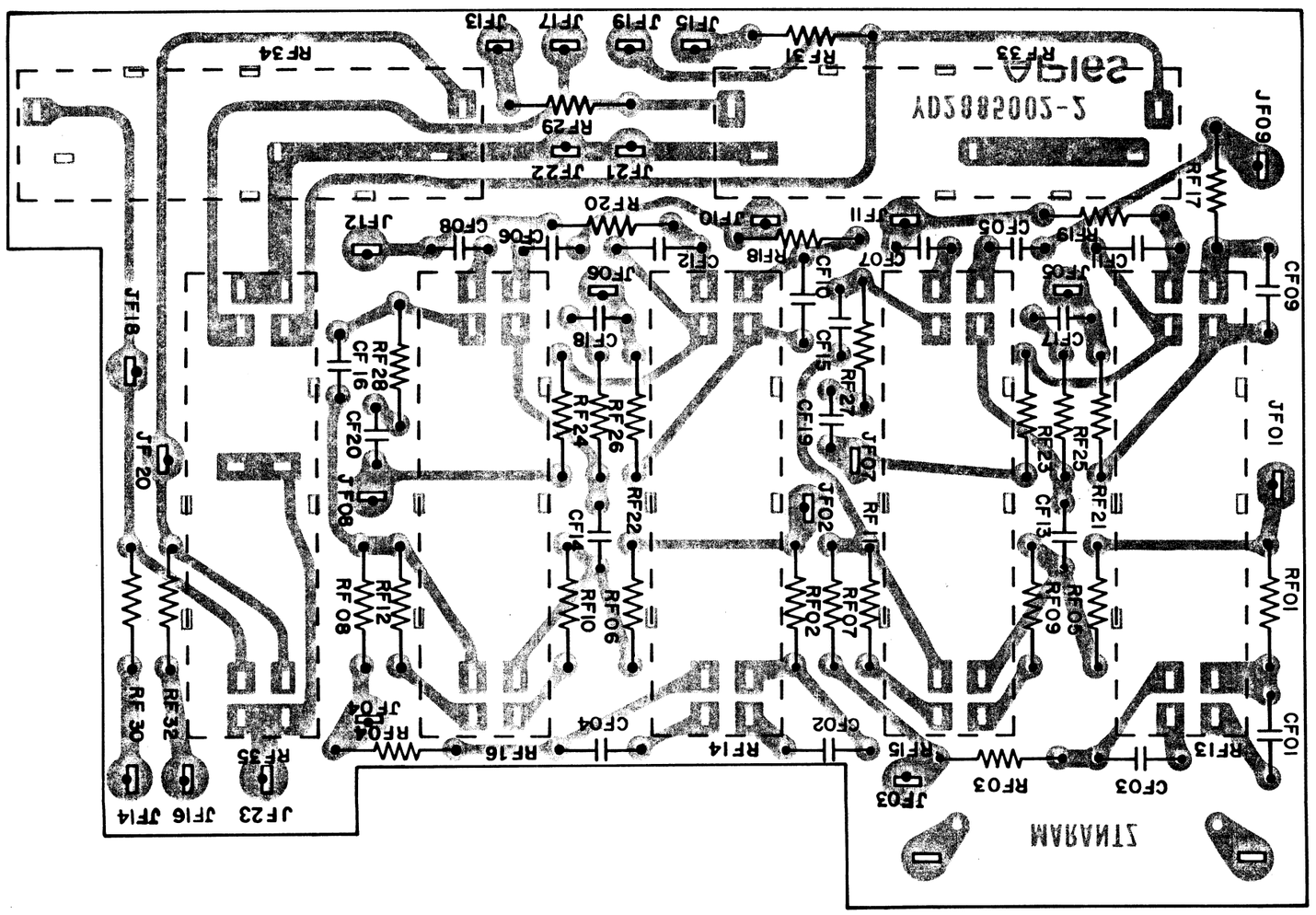


Figure 12. Tone and Balance Control Unit Assembly PF01 Component Locations

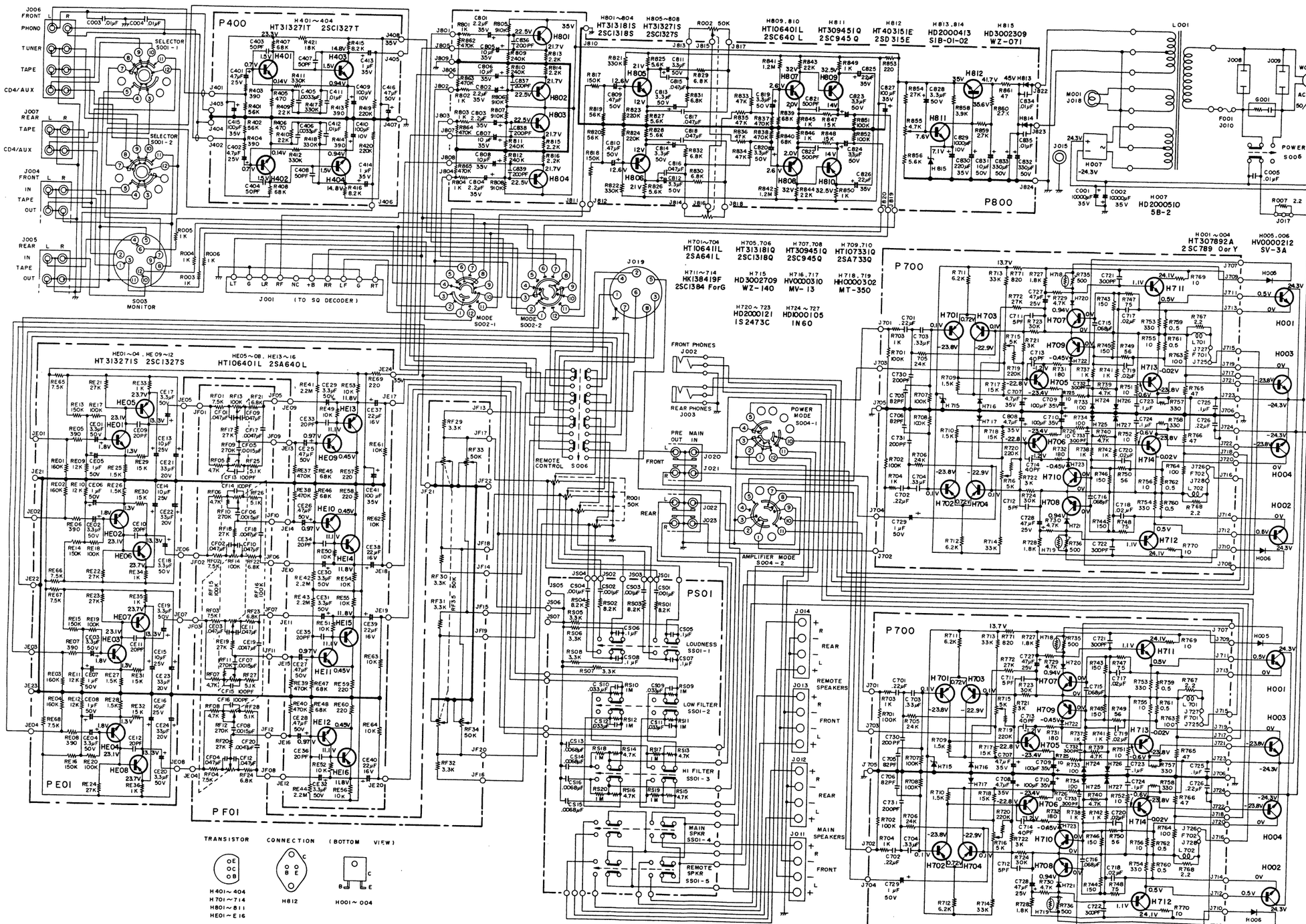


Figure 13. Schematic Diagram

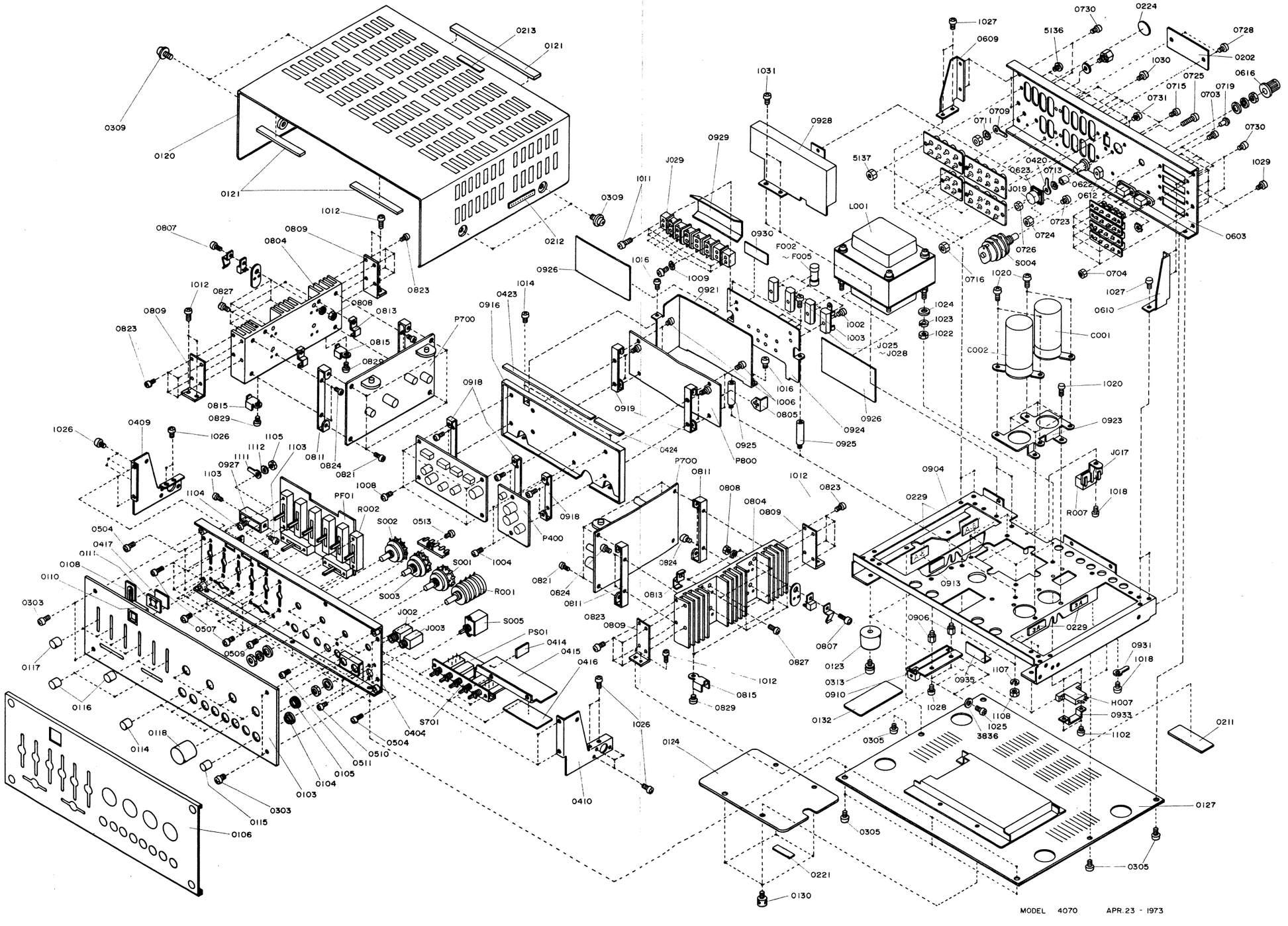


Figure 14. Exploded Mechanical Diagram

PARTS LIST

REF. DESIG.	MARANTZ PART NO.	DESCRIPTION
0916	288516050	Bracket K
1004	51100305S	B.H.M. Screw x 2
1006	51100305S	B.H.M. Screw x 4
1010	51100305S	B.H.M. Screw x 4
P400	YD2885006	P.W. Board, Phono, EQ
	ZZ2885006	P.W. Board Ass'y
		RESISTORS
		All resistors are ±5% and ¼W, unless otherwise indicated.
R401	RT0556314	56KΩ
R402	RT0556314	56KΩ
R403	RT0539114	390Ω
R404	RT0539114	390Ω
R405	RT0547114	470Ω
R406	RT0547114	470Ω
R407	RN1068314	68KΩ ±10%, ¼W
R408	RN1068314	68KΩ ±10%, ¼W
R409	RT0522314	22KΩ
R410	RT0522314	22KΩ
R411	RT0533414	330KΩ
R412	RT0533414	330KΩ
R413	RT0539114	390Ω
R414	RT0539114	390Ω
R415	RT0582214	8.2KΩ
R416	RT0582214	8.2KΩ
R417	RT0533414	330KΩ
R418	RT0533414	330KΩ
R419	RT0522414	220KΩ
R420	RT0522414	220KΩ
R421	RT0518314	18KΩ
		CAPACITORS
C401	EE4750251	Electroly, 4.7μF ±20%, 25V
C402	EE4750251	Electroly, 4.7μF ±20%, 25V
C403	DD1650001	Ceramic, 50PF ±10%, 50V
C404	DD1650001	Ceramic, 50PF ±10%, 50V
C405	DF1633205	Film, 0.0033μF ±10%, 50V
C406	DF1633205	Film, 0.0033μF ±10%, 50V
C407	DD1650001	Ceramic, 50PF ±10%, 50V
C408	DD1650001	Ceramic, 50PF ±10%, 50V
C409	EA1070109	Electroly, 100μF +100%, -10%, 10V
C410	EA1070109	Electroly, 100μF +100%, -10%, 10V
C411	DF1610305	Film, 0.01μF ±10%, 50V
C412	DF1610305	Film, 0.01μF ±10%, 50V
C413	EE1050501	Electroly, 1μF ±20%, 50V
C414	EE1050501	Electroly, 1μF ±20%, 50V
C415	EA1070359	Electroly, 100μF +100%, -10%, 35V
C416	EA4760509	Electroly, 47μF +100%, -10%, 50V
		SEMICONDUCTORS
H401	HT313271T	Transistor, 2SC1327 (T)
H402	HT313271T	Transistor, 2SC1327 (T)
H403	HT313271T	Transistor, 2SC1327 (T)
H404	HT313271T	Transistor, 2SC1327 (T)
		MISCELLANEOUS
J401 ~ J408	YP1000094	Plug

REF. DESIG.	MARANTZ PART NO.	DESCRIPTION
PE01	YD2885003	P.W. Board, Tone Amp.
	ZZ2885003	P.W. Board Ass'y
		RESISTORS
		All resistors are ±5% and ¼W.
RE01	RT0547314	47KΩ
RE02	RT0547314	47KΩ
RE03	RT0547314	47KΩ
RE04	RT0547314	47KΩ
RE05	RT0539114	390Ω
RE06	RT0539114	390Ω
RE07	RT0539114	390Ω
RE08	RT0539114	390Ω
RE09	RT0512314	12KΩ
RE10	RT0512314	12KΩ
RE11	RT0512314	12KΩ
RE12	RT0512314	12KΩ
RE13	RT0515414	150KΩ
RE14	RT0515414	150KΩ
RE15	RT0515414	150KΩ
RE16	RT0515414	150KΩ
RE17	RT0510414	100KΩ
RE18	RT0510414	100KΩ
RE19	RT0510414	100KΩ
RE20	RT0510414	100KΩ
RE21	RT0527314	27KΩ
RE22	RT0527314	27KΩ
RE23	RT0527314	27KΩ
RE24	RT0527314	27KΩ
RE25	RT0515214	1.5KΩ
RE26	RT0515214	1.5KΩ
RE27	RT0515214	1.5KΩ
RE28	RT0515214	1.5KΩ
RE29	RT0515314	15KΩ
RE30	RT0515314	15KΩ
RE31	RT0515314	15KΩ
RE32	RT0515314	15KΩ
RE33	RT0510214	1KΩ
RE34	RT0510214	1KΩ
RE35	RT0510214	1KΩ
RE36	RT0510214	1KΩ
RE37	RT0547414	470KΩ
RE38	RT0547414	470KΩ
RE39	RT0547414	470KΩ
RE40	RT0547414	470KΩ
RE41	RT0522514	2.2MΩ
RE42	RT0522514	2.2MΩ
RE43	RT0522514	2.2MΩ
RE44	RT0522514	2.2MΩ
RE45	RT0568314	68KΩ
RE46	RT0568314	68KΩ
RE47	RT0568314	68KΩ
RE48	RT0568314	68KΩ
RE49	RT0510314	10KΩ
RE50	RT0510314	10KΩ
RE51	RT0510314	10KΩ
RE52	RT0510314	10KΩ
RE53	RT0510314	10KΩ
RE54	RT0510314	10KΩ
RE55	RT0510314	10KΩ
RE56	RT0510314	10KΩ
RE57	RT0522114	220Ω

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REF. DESIG.	MARANTZ PART NO.	DESCRIPTION
RE58	RT0522114	220Ω
RE59	RT0522114	220Ω
RE60	RT0522114	220Ω
RE61	RT0510314	10KΩ
RE62	RT0510314	10KΩ
RE63	RT0510314	10KΩ
RE64	RT0510314	10KΩ
RE65	RT0575214	7.5KΩ
RE66	RT0575214	7.5KΩ
RE67	RT0575214	7.5KΩ
RE68	RT0575214	7.5KΩ
RE69	RT0522114	220Ω
		CAPACITORS
CE01	EE3350501	Electroly, 3.3μF ±20%, 50V
CE02	EE3350501	Electroly, 3.3μF ±20%, 50V
CE03	EE3350501	Electroly, 3.3μF ±20%, 50V
CE04	EE3350501	Electroly, 3.3μF ±20%, 50V
CE05	EA1050509	Electroly, 1μF +100%, -10%, 50V
CE06	EA1050509	Electroly, 1μF +100%, -10%, 50V
CE07	EA1050509	Electroly, 1μF +100%, -10%, 50V
CE08	EA1050509	Electroly, 1μF +100%, -10%, 50V
CE09	DD1620001	Ceramic, 20PF ±10%, 50V
CE10	DD1620001	Ceramic, 20PF ±10%, 50V
CE11	DD1620001	Ceramic, 20PF ±10%, 50V
CE12	DD1620001	Ceramic, 20PF ±10%, 50V
CE13	EA1060259	Electroly, 10μF +100%, -10%, 25V
CE14	EA1060259	Electroly, 10μF +100%, -10%, 25V
CE15	EA1060259	Electroly, 10μF +100%, -10%, 25V
CE16	EA1060259	Electroly, 10μF +100%, -10%, 25V
CE17	EA3350509	Electroly, 3.3μF +100%, -10%, 50V
CE18	EA3350509	Electroly, 3.3μF +100%, -10%, 50V
CE19	EA3350509	Electroly, 3.3μF +100%, -10%, 50V
CE20	EA3350509	Electroly, 3.3μF +100%, -10%, 50V
CE21	EA3360259	Electroly, 33μF +100%, -10%, 20V
CE22	EA3360259	Electroly, 33μF +100%, -10%, 20V
CE23	EA3360259	Electroly, 33μF +100%, -10%, 20V
CE24	EA3360259	Electroly, 33μF +100%, -10%, 20V
CE25	EA4740501	Electroly, 0.47μF +100%, -10%, 50V
CE26	EA4740501	Electroly, 0.47μF +100%, -10%, 50V
CE27	EA4740501	Electroly, 0.47μF +100%, -10%, 50V
CE28	EA4740501	Electroly, 0.47μF +100%, -10%, 50V
CE29	EA3350509	Electroly, 3.3μF +100%, -10%, 50V
CE30	EA3350509	Electroly, 3.3μF +100%, -10%, 50V
CE31	EA3350509	Electroly, 3.3μF +100%, -10%, 50V
CE32	EA3350509	Electroly, 3.3μF +100%, -10%, 50V
CE33	DD1620001	Ceramic, 20PF ±10%, 50V
CE34	DD1620001	Ceramic, 20PF ±10%, 50V
CE35	DD1620001	Ceramic, 20PF ±10%, 50V
CE36	DD1620001	Ceramic, 20PF ±10%, 50V
CE37	EA2260169	Electroly, 22μF +100%, -10%, 16V
CE38	EA2260169	Electroly, 22μF +100%, -10%, 16V
CE39	EA2260169	Electroly, 22μF +100%, -10%, 16V
CE40	EA2260169	Electroly, 22μF +100%, -10%, 16V
CE41	EA1070359	Electroly, 100μF +100%, -10%, 35V
		SEMICONDUCTORS
HE01	HT313271S	Transistor, 2SC1327 S
HE02	HT313271S	Transistor, 2SC1327 S
HE03	HT313271S	Transistor, 2SC1327 S
HE04	HT313271S	Transistor, 2SC1327 S
HE05	HT106401L	Transistor, 2SA640 L

REF. DESIG.	MARANTZ PART NO.	DESCRIPTION
HE06	HT106401L	Transistor, 2SA640 L
HE07	HT106401L	Transistor, 2SA640 L
HE08	HT106401L	Transistor, 2SA640 L
HE09	HT313271S	Transistor, 2SC1327 S
HE10	HT313271S	Transistor, 2SC1327 S
HE11	HT313271S	Transistor, 2SC1327 S
HE12	HT313271S	Transistor, 2SC1327 S
HE13	HT106401L	Transistor, 2SA640 L
HE14	HT106401L	Transistor, 2SA640 L
HE15	HT106401L	Transistor, 2SA640 L
HE16	HT106401L	Transistor, 2SA640 L
		MISCELLANEOUS
JE01 ~ JE24	YP1000110	Plug
P800	YD2885001	P.W. Board, Power Supply, Vari-Matrix, Buffer
	ZZ2885001	P.W. Board Ass'y
		RESISTORS **All resistors are ±5% and ¼W, unless otherwise indicated.**
R801	RT0510214	1KΩ
R802	RT0510214	1KΩ
R803	RT0510214	1KΩ
R804	RT0510214	1KΩ
R805	RT0524414	240KΩ
R806	RT0524414	240KΩ
R807	RT0524414	240KΩ
R808	RT0524414	240KΩ
R809	RT0591414	910KΩ
R810	RT0591414	910KΩ
R811	RT0591414	910KΩ
R812	RT0591414	910KΩ
R813	GT0522212	2.2KΩ ±5%, ½W
R814	GT0522212	2.2KΩ ±5%, ½W
R815	GT0522212	2.2KΩ ±5%, ½W
R816	GT0522212	2.2KΩ ±5%, ½W
R817	RT0515414	150KΩ
R818	RT0515414	150KΩ
R819	RT0556314	56KΩ
R820	RT0556314	56KΩ
R821	RT0533414	330KΩ
R822	RT0533414	330KΩ
R823	RT0522414	220KΩ
R824	RT0522414	220KΩ
R825	RT0556214	5.6KΩ
R826	RT0556214	5.6KΩ
R827	RT0556214	5.6KΩ
R828	RT0556214	5.6KΩ
R829	RT0568214	6.8KΩ
R830	RT0568214	6.8KΩ
R831	RT0568214	6.8KΩ
R832	RT0568214	6.8KΩ
R833	RT0547314	47KΩ
R834	RT0547314	47KΩ
R835	RT0547314	47KΩ
R836	RT0547314	47KΩ
R837	RT0547414	470KΩ

REF. DESIG.	MARANTZ PART NO.	DESCRIPTION
R838	RT0547414	470KΩ
R839	RT0568314	68KΩ
R840	RT0568314	68KΩ
R841	RT0512514	1.2MΩ
R842	RT0512514	1.2MΩ
R843	RT0522314	22KΩ
R844	RT0522314	22KΩ
R845	RT0510214	1KΩ
R846	RT0510214	1KΩ
R847	RT0515314	15KΩ
R848	RT0515314	15KΩ
R849	RT0510214	1KΩ
R850	RT0510214	1KΩ
R851	RT0510414	100KΩ
R852	RT0510414	100KΩ
R853	RT0522114	220Ω
R854	RT0527314	27KΩ
R855	RA0502019	Trimming, 5KΩ (B)
R856	RT0556214	5.6KΩ
R858	RT0539214	3.9KΩ
R859	RT0527214	2.7KΩ
R860	RT0527214	2.7KΩ
R861	RJ1047001	47Ω ±10%, 1W
R862	RT0547414	470KΩ
R863	RT0547414	470KΩ
R864	RT0547414	470KΩ
R865	RT0547414	470KΩ
		CAPACITORS
C801	EE2250351	Electroly, 2.2μF ±20%, 35V
C802	EE2250351	Electroly, 2.2μF ±20%, 35V
C803	EE2250351	Electroly, 2.2μF ±20%, 35V
C804	EE2250351	Electroly, 2.2μF ±20%, 35V
C805	EE1060351	Electroly, 10μF ±20%, 35V
C806	EE1060351	Electroly, 10μF ±20%, 35V
C807	EE1060351	Electroly, 10μF ±20%, 35V
C808	EE1060351	Electroly, 10μF ±20%, 35V
C809	EE4740501	Electroly, 0.47μF ±20%, 50V
C810	EE4740501	Electroly, 0.47μF ±20%, 50V
C811	EE3350501	Electroly, 3.3μF ±20%, 50V
C812	EE3350501	Electroly, 3.3μF ±20%, 50V
C813	EE3350501	Electroly, 3.3μF ±20%, 50V
C814	EE3350501	Electroly, 3.3μF ±20%, 50V
C815	DF1647305	Film, 0.047μF ±10%, 50V
C816	DF1647305	Film, 0.047μF ±10%, 50V
C817	DF1647305	Film, 0.047μF ±10%, 50V
C818	DF1647305	Film, 0.047μF ±10%, 50V
C819	EE3350501	Electroly, 3.3μF ±20%, 50V
C820	EE3350501	Electroly, 3.3μF ±20%, 50V
C821	DD1650101	Ceramic, 500PF ±10%, 50V
C822	DD1650101	Ceramic, 500PF ±10%, 50V
C823	EE3350501	Electroly, 3.3μF ±20%, 50V
C824	EE3350501	Electroly, 3.3μF ±20%, 50V
C825	EA2260359	Electroly, 22μF +100%, -10%, 35V
C826	EA2260359	Electroly, 22μF +100%, -10%, 35V
C827	EA1070359	Electroly, 100μF +100%, -10%, 35V
C828	EA3350509	Electroly, 3.3μF +100%, -10%, 50V
C829	EA1080109	Electroly, 1000μF +100%, -10%, 10V
C830	EA2270359	Electroly, 220μF +100%, -10%, 35V
C831	EA1060509	Electroly, 10μF +100%, -10%, 50V
C832	EA3370509	Electroly, 330μF +100%, -10%, 50V

REF. DESIG.	MARANTZ PART NO.	DESCRIPTION
C833	EA3370509	Electroly, 330μF +100%, -10%, 50V
C834	DK1810351	Ceramic, 0.01μF +100%, -0%, 500V
C835	DK1810351	Ceramic, 0.01μF +100%, -0%, 500V
C836	DD1620101	Ceramic, 200PF ±10%, 50V
C837	DD1620101	Ceramic, 200PF ±10%, 50V
C838	DD1620101	Ceramic, 200PF ±10%, 50V
C839	DD1620101	Ceramic, 200PF ±10%, 50V
		SEMICONDUCTORS
H801	HT313181S	Transistor, 2SC1318 (S)
H802	HT313181S	Transistor, 2SC1318 (S)
H803	HT313181S	Transistor, 2SC1318 (S)
H804	HT313181S	Transistor, 2SC1318 (S)
H805	HT313271S	Transistor, 2SC1327 (S)
H806	HT313271S	Transistor, 2SC1327 (S)
H807	HT313271S	Transistor, 2SC1327 (S)
H808	HT313271S	Transistor, 2SC1327 (S)
H809	HT106401L	Transistor, 2SA640 (L)
H810	HT106401L	Transistor, 2SA640 (L)
H811	HT309451Q	Transistor, 2SC945 (Q)
H812	HT403151E	Transistor, 2SD315 (E)
H813	HD2000413	Diode, SIB-01-02
H814	HD2000413	Diode, SIB-01-02
H815	HD3002309	Diode, WZ-071
		MISCELLANEOUS
J801 ~ J824	YP1000110	Plug
P700	YD2885005	P.W. Board, Main Amp. x 2
	ZZ2885005	P.W. Board Ass'y x 2
		RESISTORS **All resistors are ±5% and ¼W, unless otherwise indicated.**
R701	RT0510414	100KΩ x 2
R702	RT0510414	100KΩ x 2
R703	RT0510214	1KΩ x 2
R704	RT0510214	1KΩ x 2
R705	RT0524314	24KΩ x 2
R706	RT0524314	24KΩ x 2
R707	RT0510414	100KΩ x 2
R708	RT0510414	100KΩ x 2
R709	RT0515214	1.5KΩ x 2
R710	RT0515214	1.5KΩ x 2
R711	RT0562214	6.2KΩ x 2
R712	RT0562214	6.2KΩ x 2
R713	RT0527314	27KΩ x 2
R714	RT0527314	27KΩ x 2
R715	RA0502017	Trimming, 5KΩ (B) x 2
R716	RA0502017	Trimming, 5KΩ (B) x 2
R717	RT0515314	15KΩ x 2
R718	RT0515314	15KΩ x 2
R719	RT0522414	220KΩ x 2
R720	RT0522414	220KΩ x 2
R721	RT0530214	3KΩ x 2
R722	RT0530214	3KΩ x 2
R723	RT0530314	30KΩ x 2
R724	RT0530314	30KΩ x 2
R725	RT0510014	10Ω x 2
R726	RT0510014	10Ω x 2

REF. DESIG.	MARANTZ PART NO.	DESCRIPTION
R727	RT0518214	1.8KΩ x 2
R728	RT0518214	1.8KΩ x 2
R729	RT0547214	4.7KΩ x 2
R730	RT0547214	4.7KΩ x 2
R731	RT0518114	180Ω x 2
R732	RT0518114	180Ω x 2
R733	RT0510114	100Ω x 2
R734	RT0510114	100Ω x 2
R735	RA0501010	Trimming, 500Ω x 2
R736	RA0501010	Trimming, 500Ω x 2
R737	GF0510214	1KΩ x 2
R738	GF0510214	1KΩ x 2
R739	RT0547214	4.7KΩ x 2
R740	RT0547214	4.7KΩ x 2
R741	GF0510214	1KΩ x 2
R742	GF0510214	1KΩ x 2
R743	GF0515114	150Ω x 2
R744	GF0515114	150Ω x 2
R745	GF0515114	150Ω x 2
R746	GF0515114	150Ω x 2
R747	GF0575014	75Ω x 2
R748	GF0575014	75Ω x 2
R749	GF0556014	56Ω x 2
R750	GF0556014	56Ω x 2
R751	RC1010012	10Ω ±10%, ½W x 2
R752	RC1010012	10Ω ±10%, ½W x 2
R753	GF0533114	330Ω x 2
R754	GF0533114	330Ω x 2
R755	GF0510014	10Ω x 2
R756	GF0510014	10Ω x 2
R757	GF0533114	330Ω x 2
R758	GF0533114	330Ω x 2
R759	RW1000503	0.5Ω ±10%, 3W x 2
R760	RW1000503	0.5Ω ±10%, 3W x 2
R761	RW1000503	0.5Ω ±10%, 3W x 2
R762	RW1000503	0.5Ω ±10%, 3W x 2
R763	RJ1010101	100Ω ±10%, 1W x 2
R764	RJ1010101	100Ω ±10%, 1W x 2
R765	RC1047012	47Ω ±10%, ½W x 2
R766	RC1047012	47Ω ±10%, ½W x 2
R767	RC1022012	22Ω ±10%, ½W x 2
R768	RC1022012	22Ω ±10%, ½W x 2
R769	GF0510014	10Ω x 2
R770	GF0510014	10Ω x 2
R771	RT0582114	820Ω x 2
R772	RT0527314	27KΩ x 2
		COILS
L701	LC2272001	Choke Coil x 2
L702	LC2272001	Choke Coil x 2
		CAPACITORS
C701	DF1722405	Film, 0.22μF ±20%, 50V x 2
C702	DF1722405	Film, 0.22μF ±20%, 50V x 2
C703	DF1733405	Film, 0.33μF ±20%, 50V x 2
C704	DF1733405	Film, 0.33μF ±20%, 50V x 2
C705	DD1582001	Ceramic, 82PF ±5%, 50V x 2
C706	DD1582001	Ceramic, 82PF ±5%, 50V x 2
C707	EA4750359	Electroly, 4.7μF+100%,-10%,35V x 2
C708	EA4750359	Electroly, 4.7μF+100%,-10%,35V x 2
C709	EA1070359	Electroly, 100μF+100%,-10%,35V x 2
C710	EA1070359	Electroly, 100μF+100%,-10%,35V x 2

REF. DESIG.	MARANTZ PART NO.	DESCRIPTION
C711	DD1005002	Ceramic, 5PF ±0.25PF, 50V x 2
C712	DD1005002	Ceramic, 5PF ±0.25PF, 50V x 2
C713	DD1540003	Ceramic, 40PF ±5%, 50V x 2
C714	DD1540003	Ceramic, 40PF ±5%, 50V x 2
C715	DF1768301	Film, 0.068μF ±20%, 50V x 2
C716	DF1768301	Film, 0.068μF ±20%, 50V x 2
C717	DK1820303	Ceramic, 0.02μF+80%,-20%,25V x 2
C718	DK1820303	Ceramic, 0.02μF+80%,-20%,25V x 2
C719	DK1820303	Ceramic, 0.02μF+80%,-20%,25V x 2
C720	DK1820303	Ceramic, 0.02μF+80%,-20%,25V x 2
C721	DD1530101	Ceramic, 300PF ±10%, 50V x 2
C722	DD1530101	Ceramic, 300PF ±10%, 50V x 2
C723	DF1710405	Film, 0.1μF ±20%, 50V x 2
C724	DF1710405	Film, 0.1μF ±20%, 50V x 2
C725	DF1622405	Film, 0.22μF ±10%, 50V x 2
C726	DF1622405	Film, 0.22μF ±10%, 50V x 2
C727	EA4760259	Electroly, 47μF+100%,-10%,25V x 2
C728	EA4760259	Electroly, 47μF+100%,-10%,25V x 2
C729	EA1050509	Electroly, 1μF +100%,-10%, 50V x 2
C730	DD1620101	Ceramic, 200PF ±10%, 50V x 2
C731	DD1620101	Ceramic, 200PF ±10%, 50V x 2
C732	DD1530101	Ceramic, 300PF ±5%, 50V x 2
C733	DD1530101	Ceramic, 300PF ±5%, 50V x 2
		SEMICONDUCTORS
H701	HT106411L	Transistor, 2SA641 (L) x 2
H702	HT106411L	Transistor, 2SA641 (L) x 2
H703	HT106411L	Transistor, 2SA641 (L) x 2
H704	HT106411L	Transistor, 2SA641 (L) x 2
H705	HT313181Q	Transistor, 2SC1318 (Q) x 2
H706	HT313181Q	Transistor, 2SC1318 (Q) x 2
H707	HT309451Q	Transistor, 2SC945 (Q) x 2
H708	HT309451Q	Transistor, 2SC945 (Q) x 2
H709	HT107331Q	Transistor, 2SA733 (Q) x 2
H710	HT107331Q	Transistor, 2SA733 (Q) x 2
H711	HT313841F	Transistor, 2SC1384F
H712	HT313841F	Transistor, 2SC1384F
H713	HT106841F	Transistor, 2SA684F
H714	HT106841F	Transistor, 2SA684F
H715	HD3002709	Diode, WZ-140 x 2
H716	HV0000312	Diode, MV-13 x 2
H717	HV0000312	Diode, MV-13 x 2
H718	HH0001502	Thermistor, TD5-A135 x 2
H719	HH0001502	Thermistor, TD-A135 x 2
H720	HD2000121	Diode, 1S2473C x 2
H721	HD2000121	Diode, 1S2473C x 2
H722	HD2000121	Diode, 1S2473C x 2
H723	HD2000121	Diode, 1S2473C x 2
H724	HD1000105	Diode, 1N60 x 2
H725	HD1000105	Diode, 1N60 x 2
H726	HD1000105	Diode, 1N60 x 2
H727	HD1000105	Diode, 1N60 x 2
		MISCELLANEOUS
J701 ~ J714	YP1000099	Plug x 2
J715 ~ J716	YP1000094	Plug x 2

REF. DESIG.	MARANTZ PART NO.	DESCRIPTION
J717 ~ J724	YP1000099	Plug x 2
J725 ~ J728	YJ0800017	Socket x 2
0804	285126701	Heat Sink x 2
0805	288526701	Heat Sink
0807	51060312E	P.H.M. Screw x 8
0808	53110303E	Hexagon Nut x 8
0809	285110403	Retainer x 4
0811	285116006	Bracket x 4
0813	282026702	Heat Sink x 4
0815	285100501	Clamper x 4
0829	51570408B	P.H. Tapt Screw x 4
0821	51100306S	B.H.M. Screw x 8
0823	51570306B	P.H. Tapt Screw x 16
0824	51570306B	P.H. Tapt Screw x 8
0827	51100308S	B.H.M. Screw x 4
H001	HT307892A	Transistor, 2SC789 O or Y x 2
H002	HT307892A	Transistor, 2SC789 O or Y x 2
H003	HT307892A	Transistor, 2SC789 O or Y x 2
H004	HT307892A	Transistor, 2SC789 O or Y x 2
H005	HV0000212	Varistor, SV-3A x 2
H006	HV0000212	Varistor, SV-3A x 2
A	288506340	Escutcheon Ass'y
0103	288506301	Escutcheon
0104	281825905	Bush x 6
0105	273125901	Bush, Headphone x 2
0106	285105301	Cover
0108	285026901	Bush, Slide Volume x 8
0110	285105302	Cover, Lamp
0111	285125101	Badge, Lamp
0417	285110702	Sheet, Badge
0404	285116050	Bracket K
0409	288516006	Bracket
0410	288516007	Bracket
J016	YL0105011	Terminal, 5P
J006	YT0208002	Terminal, Front CD-4/AUX, 8P
J007	YT0204003	Terminal, Rear CD-4/AUX, 8P
C003	DK1810301	Ceramic, 0.01μF
C004	DK1810301	Ceramic, 0.01μF
0504	51100306A	B.H.M. Screw x 4
0507	51102604A	B.H.M. Screw, Slide Vol. x 16

REF. DESIG.	MARANTZ PART NO.	DESCRIPTION
0509	51100306A	B.H.M. Screw, Push Switch x 2
0510	51100306A	B.H.M. Screw, Push Switch x 2
0511	51102604A	B.H.M. Screw, Shield x 2
0513	51570306B	P.H. Tapt Screw, 5P Terminal
1103	51100304E	B.H.M. Screw, Badge Lamp Cover
1104	51100306E	B.H.M. Screw, Lamp
1105	53110301E	Hexagon Nut, Lamp
1111	62031650W	Lug, Badge Lamp
1112	54060300R	T.L. Washer OR, Earth Lug
0927	285116008	Bracket, Badge Lamp
J018	YJ0800019	Jack, Lamp
M001	IN1008007	Lamp
S005	SP0201012	Push Switch, Power
C005	DK1810351	Ceramic Cap., 0.01μF, 500V
0415	285110901	Shield
0416	288512002	Insulator
0414	285112002	Insulator
PF01	YD2885002	P.W. Board, Tone & Balance
	ZZ2885002	P.W. Board Ass'y
		RESISTORS **All resistors are ±5% and ¼W, unless otherwise indicated.**
RF01	RT0575214	7.5KΩ
RF02	RT0575214	7.5KΩ
RF03	RT0575214	7.5KΩ
RF04	RT0575214	7.5KΩ
RF05	RT0547214	4.7KΩ
RF06	RT0547214	4.7KΩ
RF07	RT0547214	4.7KΩ
RF08	RT0547214	4.7KΩ
RF09	RT0527414	270KΩ
RF10	RT0527414	270KΩ
RF11	RT0527414	270KΩ
RF12	RT0527414	270KΩ
RF13	RS0104003	Variable, 100KΩ, Tone
RF14	RS0104003	Variable, 100KΩ, Tone
RF15	RS0104003	Variable, 100KΩ, Tone
RF16	RS0104003	Variable, 100KΩ, Tone
RF17	RT0527314	27KΩ
RF18	RT0527314	27KΩ
RF19	RT0527314	27KΩ
RF20	RT0527314	27KΩ
RF21	RT0568214	6.8KΩ
RF22	RT0568214	6.8KΩ
RF23	RT0568214	6.8KΩ
RF24	RT0568214	6.8KΩ
RF25	RT0551214	5.1KΩ
RF26	RT0551214	5.1KΩ
RF27	RT0551214	5.1KΩ
RF28	RT0551214	5.1KΩ
RF29	RT0533214	3.3KΩ
RF30	RT0533214	3.3KΩ
RF31	RT0533214	3.3KΩ
RF32	RT0533214	3.3KΩ
RF33	RX0503005	Variable, 50KΩ, Balance

REF. DESIG.	MARANTZ PART NO.	DESCRIPTION
RF34	RX0503005	Variable, 50KΩ, Balance
RF35	RS0503016	Variable, 50KΩ, Balance
		CAPACITORS
CF01	DF1647305	Film, 0.047μF ±10%, 50V
CF02	DF1647305	Film, 0.047μF ±10%, 50V
CF03	DF1647305	Film, 0.047μF ±10%, 50V
CF04	DF1647305	Film, 0.047μF ±10%, 50V
CF05	DF1615205	Film, 0.0015μF ±10%, 50V
CF06	DF1615205	Film, 0.0015μF ±10%, 50V
CF07	DF1615205	Film, 0.0015μF ±10%, 50V
CF08	DF1615205	Film, 0.0015μF ±10%, 50V
CF09	DF1647305	Film, 0.047μF ±10%, 50V
CF10	DF1647305	Film, 0.047μF ±10%, 50V
CF11	DF1647305	Film, 0.047μF ±10%, 50V
CF12	DF1647305	Film, 0.047μF ±10%, 50V
CF13	DD1510101	Ceramic, 100PF ±5%, 50V
CF14	DD1510101	Ceramic, 100PF ±5%, 50V
CF15	DD1510101	Ceramic, 100PF ±5%, 50V
CF16	DD1510101	Ceramic, 100PF ±5%, 50V
CF17	DF1647205	Film, 0.00047μF ±10%, 50V
CF18	DF1647205	Film, 0.00047μF ±10%, 50V
CF19	DF1647205	Film, 0.00047μF ±10%, 50V
CF20	DF1647205	Film, 0.00047μF ±10%, 50V
		MISCELLANEOUS
JF01 ≀ JF23	YP1000099	Plug
R001	RG0503002	Variable Resist., 50KΩ (B), Main
S001	SR0604009	Rotary Switch, Selector
PS01	YD2885004	P.W. Board, Switch
	ZZ2885004	P.W. Board Ass'y
		RESISTORS **All resistors are ±5% and ¼W.**
RS01	RT0582214	8.2KΩ
RS02	RT0582214	8.2KΩ
RS03	RT0582214	8.2KΩ
RS04	RT0582214	8.2KΩ
RS05	RT0533214	3.3KΩ
RS06	RT0533214	3.3KΩ
RS07	RT0533214	3.3KΩ
RS08	RT0533214	3.3KΩ
RS09	RT0510514	1MΩ
RS10	RT0510514	1MΩ
RS11	RT0510514	1MΩ
RS12	RT0510514	1MΩ
RS13	RT0547214	4.7KΩ
RS14	RT0547214	4.7KΩ
RS15	RT0547214	4.7KΩ
RS16	RT0547214	4.7KΩ
RS17	RT0510514	1MΩ
RS18	RT0510514	1MΩ
RS19	RT0510514	1MΩ
RS20	RT0510514	1MΩ
		CAPACITORS
CS01	DF1610201	Film, 0.001μF ±10%, 50V
CS02	DF1610201	Film, 0.001μF ±10%, 50V

REF. DESIG.	MARANTZ PART NO.	DESCRIPTION
CS03	DF1610201	Film, 0.001μF ±10%, 50V
CS04	DF1610201	Film, 0.001μF ±10%, 50V
CS05	DF1610401	Film, 0.1μF
CS06	DF1610401	Film, 0.1μF
CS07	DF1610401	Film, 0.1μF
CS08	DF1610401	Film, 0.1μF
CS09	DF1633301	Film, 0.033μF
CS10	DF1633301	Film, 0.033μF
CS11	DF1633301	Film, 0.033μF
CS12	DF1633301	Film, 0.033μF
CS13	DF1668201	Film, 0.0068μF
CS14	DF1668201	Film, 0.0068μF
CS15	DF1668201	Film, 0.0068μF
CS16	DF1668201	Film, 0.0068μF
		MISCELLANEOUS
S701	SP0405008	Push Switch, 5 Keys
JS01 ≀ JS07	YP1000011	Plug
S003	SR0402009	Rotary Switch, Tape Monitor
S002	SR0805021	Rotary Switch, Mode
R003	RT0510214	Resistor, 1KΩ ±5%, ¼W
R004	RT0510214	Resistor, 1KΩ ±5%, ¼W
R005	RT0510214	Resistor, 1KΩ ±5%, ¼W
R006	RT0510214	Resistor, 1KΩ ±5%, ¼W
3836	59030810P	Washer x 2
J001	YJ0700006	Jack
0910	285110450	Retainer K
1025	51100310S	B.H.M. Screw x 2
J002	YJ0100065	Jack, Headphone
J003	YJ0100065	Jack, Headphone
R002	RS0503013	Variable Resist., 50KΩ (B) Dimension
J017	YL0103018	Terminal, 3P
R007	GS1002205	Resistor, 2.2MΩ ±10%, 5W
H007	HD2000510	Diode, 5B-2
0609	288516008	Bracket
0610	288516009	Bracket
0612	145525903	Bush
0616	288615402	Knob
0622	281805501	Collar x 2
0420	138200503	Clamper
0713	54050300R	T.L. Washer OR
J020 ≀ J023	YP1000097	Plug, Rre, Main
G001	BF1040001	Printed Comp.

REF. DESIG.	MARANTZ PART NO.	DESCRIPTION
B	288516040	Bracket Ass'y
0603	288516001	Bracket
J004	YT0208002	Terminal, Front Main In, 8P
J005	YT0208002	Terminal, Rear Main In, 8P
J008	YJ0400018	Jack, AC Outlet
J009	YJ0400018	Jack, AC Outlet
J010	YJ0800012	Socket, Fuse Holder
J011	YT0304001	Terminal, Speaker
J012	YT0304001	Terminal, Speaker
J013	YT0304001	Terminal, Speaker
J014	YT0304001	Terminal, Speaker
J015	YT0101003	Terminal, Ground
0703	51100308S	B.H.M. Screw, Speaker Terminal x 8
0704	53110303E	Hexagon Nut, Speaker Terminal x 8
0709	62041760W	Lug, Earth Terminal
0711	54050400R	T.L. Washer OR, Earth Terminal
0715	51100308S	B.H.M. Screw, RCA Pin Terminal x 4
0716	53110303E	Hexagon Nut, RCA Pin Terminal x 4
0719	55060365S	T.R. Rivet, AC Socket x 4
0730	51100306S	B.H.M. Screw x 4
0725	51100312S	B.H.M. Screw x 2
0726	53110303E	Hexagon Nut x 2
0731	51100303S	B.H.M. Screw x 2
S006	SS0802007	Slide Switch, Remocon
J019	YJ1100012	Jack, Remocon
0623	288516004	Bracket, Remocon
0723	51100306S	B.H.M. Screw x 2
0724	53110303E	Hexagon Nut x 2
5136	51100308S	B.H.M. Screw, RCA Pin Terminal x 4
5137	53110303E	Hexagon Nut, RCA Pin Terminal x 4
W001	YC0240010	AC Cord
F001	FS1030006	Fuse, 3A, 250V, UL
S004	SR0702001	Rotary Switch, BTL
W002	YW2885001	Wire Material
W003	YX2885001	Wire Material
0904	288510550	Chassis K
0913	352812002	Insulator
1028	51100306S	B.H.M. Screw x 2
0921	288510902	Shield
1016	51570306B	P.H. Tapt Screw x 3
C001	EC1090351	Electroly Cap., 10000μF, 35V
C002	EC1090351	Electroly Cap., 10000μF, 35V
0923	288516005	Bracket
1020	51570306B	P.H. Tapt Screw x 8
0229	274726504	Indicator x 4
0928	288510901	Shield
1030	51100306S	B.H.M. Screw
1031	51570306B	P.H. Tapt Screw x 2
0933	281900501	Clamper
1102	51570306B	P.H. Tapt Screw x 2
0931	138200503	Clamper x 3
1018	51570306B	P.H. Tapt Screw x 3

REF. DESIG.	MARANTZ PART NO.	DESCRIPTION
L001	TS6050107	Power Transf.
1022	53110401E	Hexagon Nut x 4
1023	54040402N	Spring Washer x 4
1024	54020401E	Flat Washer P x 4
0935	288512003	Insulator
0132	230912001	Insulator
1012	51570306B	P.H. Tapt Screw x 8
1014	51570306B	P.H. Tapt Screw x 2
1026	51570306B	P.H. Tapt Screw x 10
1027	51570306B	P.H. Tapt Screw x 4
1029	51110306S	B.H.M. Screw x 4
0229	274726503	Indicator, Fuse 3A Label x 4
0123	275905701	Leg x 4
0313	51100410A	B.H.M. Screw x 4
0314	54020401A	Flat Washer P x 4
0315	54040402A	Spring Washer x 4
1008	51100305S	B.H.M. Screw, Tone P.W.B. x 4
0114	281815401	Knob, Push Switch x 5
0115	281815402	Knob, Power Switch
0116	285015401	Knob, Slide Volume x 4
0117	285115401	Knob, Slide Volume x 4
0118	281815403	Knob, Rotary Volume x 4
0303	51122608E	T.H.M. Screw x 4
0120	285125701	Lid
0121	257711803	Spacer x 3
0423	257711803	Spacer
0424	282711801	Spacer
0309	51100406S	B.H.M. Screw x 4
0310	54020401S	Flat Washer P x 4
0127	285125750	Lid K
0305	51100406S	B.H.M. Screw x 9
0202	288526501	Indicator
0728	51100306S	B.H.M. Screw x 2
0211	257886101	Label, Caution
0212	257886102	Label, Do not Remove ...
0213	257886103	Label, See Marking ...
0217	281826506	Indicator, Same as Line ...
0224	951110101	Label, UL
1322	952281501	Serial No Card x 4
F701	FS1030006	Fuse, 3A/250V (UL)
F702	FS1030006	Fuse, 3A/250V (UL)
1202	288585101	Instructions
1209	288585601	Schematic Diagram
1217	281885104	Instructions
1219	282885108	Instructions
1220	288585107	Instructions
1223	257785450	Guarantee Card K

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REF. DESIG.	MARANTZ PART NO.	DESCRIPTION
1302	288580101	Packing Case
1303	288580111	Packing Case
1308	282880301	Partitioner x 2
1312	901383033	Polyethylen Bag
1314	901302501	Polyethylen Bag
1317	102980401	Sleeve
1319	273182101	Silicagel x 2
0124	285125703	Lid
0130	51216059E	Screw x 4
1331	ZA0200007	Ext. Antenna, FM
1332	ZD0200010	Connective Cord, Speaker

TECHNICAL SPECIFICATIONS

Input Impedance—Low level input	Phono 47K ohms
High level input	100K ohms
Input Sensitivity—Phono	2.2mV for 15W output
High level	150mV for 15W output
Frequency Response	±2.0dB, 40Hz to 20 KHz at 1W output
Intermodulation Distortion	Less than 0.9% at rated power output from 40 Hz to 20 KHz with all channels driven (S.M.P.T.E.)
Total Harmonic Distortion	Less than 0.9% at rated power output 40 Hz to 20 KHz with all channels driven
Damping Factor (40 to 16 KHz)	Greater than 45 into 8 ohms load
Total Noise—From magnetic phono input to power amp output	Less than 3 μV equivalent input at rated output into 8 ohms
Volume Tracking	Within 3 dB
Rated continuous (R M S) Output Per channel, all channels operating simultaneously	15 watts at 4 and 8 ohms 7.5 watts at 16 ohms
Comparable Total Music Power (IHF)	90 watts at 8 ohms
Power Requirement	120V AC 50 to 60 Hz
At rated output both channels operating	220 watts
Idling Power (volume control at zero)	15 watts
Dimensions—Panel Width	14-11/64 inches
Panel Height	4-23/32 inches
Depth	11-1/32 inches
Weight—Unit alone	21.1 lbs
Packed for shipment	26.7 lbs

* These specifications and exterior designs may be changed for improvement without advance notice.

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